


Amendments to the Claims:

14 (currently amended). A method for switching a plurality of packet-oriented signals, which comprises:

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- a) supplying a respective signal having data packets to at least one port of a plurality of port units, each of the port units having a predetermined number of ports;
 - b) connecting the signal from a port on a ~~port unit~~ one of said port units to another port on another one of said port units ~~port unit~~ through a central switching unit coupled to the port units, and carrying out signal transmission between the port units and the central switching unit in steps by transmitting data blocks;
 - c) ascertaining with each port unit an address information item for each data packet supplied to ~~one of the~~ at least one port of each port unit and using the address information item to determine ~~[[that]]~~ a receiving port unit to which the data packet will be transmitted, each port unit storing, in a buffer memory associated with the ~~respective~~ receiving port unit, the data packet as a whole or segmented into a plurality of cells;

d) compiling with each port unit, at predetermined intervals of time, availability request information indicating to which of the other port units the at least one of cell and at least one data packet will be transmitted;

e) transmitting [[with]] using the port units the availability request information to the central switching unit;

f) the central switching unit evaluating the availability request information and using a prescribed specification to ascertain authorization information indicating from which port units a respective data packet or cell can be transmitted to ~~which other~~ a different port unit in a next step or in a particular one of next steps without [[the]] an occurrence of blocking;

g) transmitting the authorization information at least to the relevant transmitting port units with the central switching unit;

h) transmitting particular released data packets or cells with the transmitting port units to the central switching unit, and the central switching unit connecting [[the]] necessary paths between the transmitting port units and the

receiving port units and transmitting the data packets or cells to the respective receiving port units through the connected paths; and

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i) the receiving port units evaluating the address information in the received data packets or cells and assigning the data packets or cells to ~~the relevant~~ their respective ports, and, if necessary, recombining the cells received in a plurality of steps into data packets and outputting the data packets through the relevant ports.

15 (currently amended). The method according to claim 14, which comprises transmitting availability request and authorization information and the data packets or cells synchronously at predetermined intervals of time.

16 (currently amended). The method according to claim 14, which comprises providing the availability request information in a header of a packet or cell being transmitted by the relevant port unit to the central switching unit.

17 (currently amended). The method according to claim 16, wherein the availability request information is a number of bits corresponding to at least one of an actual and maximum possible number of port units at least to be connected to the

central switching unit, [[the]] a position of a bit within the number of bits indicating [[the]] a port unit of said number of port units to which a packet or cell is available for transmission, and one binary state of the [[bits]] bit signifying the presence of a data packet or cell to be transmitted and the other binary state signifying the absence of a data packet or cell.

18 (previously presented). The method according to claim 14, which comprises providing the authorization information in a header of a packet or cell being transmitted from the central switching unit to the relevant port unit.

19 (currently amended). The method according to claim 18, wherein the authorization information is a number of bits containing a coded designation for [[that]] a port unit to which transmission of a data packet or cell is enabled from [[that]] another port unit to which the authorization information is transmitted.

20 (previously presented). The method according to claim 14, which comprises indicating with a header of a packet or cell a port unit and a port on the port unit to which the packet or cell will be transmitted.

21 (currently amended). A method for switching and routing a plurality of packet-oriented signals in local area networks based on [[the]] Ethernet standards ~~standard~~, which comprises:

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- a) supplying a respective signal having data packets to at least one port of a plurality of port units, each of the port units having a predetermined number of ports;
 - b) connecting the signal from a port on a ~~port unit~~ one of said port units to another port on another one of said port units ~~port unit~~ through a central switching unit coupled to the port units, and carrying out signal transmission between the port units and the central switching unit in steps by transmitting data blocks;
 - c) ascertaining with each port unit an address information item for each data packet supplied to one of the at least one port of each port unit and using the address information item to determine [[that]] a receiving port unit to which the data packet will be transmitted, each port unit storing, in a buffer memory associated with the ~~respective~~ receiving port unit, the data packet as a whole or segmented into a plurality of cells;

d) compiling with each port unit, at predetermined intervals of time, availability request information indicating to which of the other port units the at least one cell and at least one data packet will be transmitted;

e) transmitting [[with]] using the port units the availability request information to the central switching unit;

f) the central switching unit evaluating the availability request information and using a prescribed specification to ascertain authorization information indicating from which port units a respective data packet or cell can be transmitted to ~~which other~~ a different port unit in a next step or in a particular one of next steps without [[the]] an occurrence of blocking;

g) transmitting the authorization information at least to the relevant transmitting port units with the central switching unit;

h) transmitting particular released data packets or cells with the transmitting port units to the central switching unit, and the central switching unit connecting [[the]] necessary paths between the transmitting port units and the

receiving port units and transmitting the data packets or cells to the respective receiving port units through the connected paths; and

i) the receiving port units evaluating the address information in the received data packets or cells and assigning the data packets or cells to ~~the relevant~~ their respective ports, and, if necessary, recombining the cells received in a plurality of steps into data packets and outputting the data packets through the relevant ports.

22 (currently amended). An apparatus for carrying out the method according to claim 14, comprising:

a central switching unit; and

a plurality of port units connected to said central switching unit, each of said port units having a predetermined number of ports and a buffer memory;

said port units and said central switching unit each having a control unit [[with]], the control unit comprising:

means for supplying a respective signal having data packets to at least one port of said port units;

means for connecting the signal from a port on one of said port units to another port on another of said port units through said central switching unit;

means for transmitting signals between said port units and said central switching unit in steps by transmitting data blocks;

means for ascertaining with each port unit an address information item for each data packet supplied to ~~one of said~~ at least one port of each of said port units;

means for using the address information item to determine [[that]] a receiving port unit to which the data packet will be transmitted, each port unit storing, in said buffer memory, the data packet as a whole or segmented into a plurality of cells;

means for compiling with each port unit, at predetermined intervals of time, availability request information indicating to which of other port units the at least one cell [[and]] or at least one data packet will be transmitted;

means for transmitting the availability request
information to the central switching unit ~~[[with]]~~ using
the port units;

means for evaluating the availability request information
with the central switching unit and for using a
prescribed specification to ascertain authorization
information indicating from which of said port units a
respective data packet or cell can be transmitted to
~~which other~~ a different port of said port units in a next
step or in a particular one of next steps without ~~[[the]]~~
an occurrence of blocking;

means for transmitting with the central switching unit
the authorization information at least to relevant
transmitting port units;

means for transmitting particular released data packets
or cells to said central switching unit with the
transmitting port units;

means for connecting necessary paths between said
transmitting port units and said other receiving port
units with said central switching unit;

means for transmitting the data packets or cells to
respective other receiving port units through connected
paths;

means for evaluating address information in the received
data packets or cells with said receiving port units; and

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means for assigning the data packets or cells to relevant
ports, and, if necessary, means for recombining the cells
received in a plurality of steps into data packets and
outputting the data packets through relevant ports.

23 (previously presented). An apparatus for switching a
plurality of packet-oriented signals, comprising:

a central switching unit; and

port units connected to said central switching unit, said port
units and said central switching unit each having a control
unit to carry out the method according to claim 14.

24 (currently amended). The apparatus according to claim 22,
wherein said central switching unit has a collision resolution
unit for using a prescribed specification to create a fairest
possible authorization information item during a condition in

which a plurality of said port units at the same time contain at least one data packet or cell available for transmission to the same other one of said port units.

25 (previously presented). The apparatus according to claim 24, wherein said collision resolution unit is integrated in said central switching unit.

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26 (previously presented). The apparatus according to claim 22, wherein each of said control units in said port units has an interface unit for coupling said port units to said central switching unit and a protocol unit for carrying out control tasks internal to a respective one of said port units.

27 (previously presented). The apparatus according to claim 23, wherein each of said control units in said port units has an interface unit for coupling said port units to said central switching unit and a protocol unit for carrying out control tasks internal to a respective one of said port units.

28 (currently amended). The apparatus according to claim 26, wherein said protocol unit is configured to transmit to said interface unit a respective information item regarding whether one of a group consisting of no data packets or cells, a single data packet or cell, and at least two data packets or

cells is available for transmission for others of said port units, so that, once an authorization information item has been received for a respective one of said port units, said interface unit can use the information to ascertain availability request information for a next step or a particular one of the next steps without further communication with said protocol unit.

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29 (currently amended). The apparatus according to claim 27, wherein said protocol unit is configured to transmit to said interface unit a respective information item regarding whether one of a group consisting of no data packets or cells, a single data packet or cell, and at least two data packets or cells are available for transmission for others of said port units, so that, once an authorization information item has been received for a respective one of said port units, said interface unit can use the information to ascertain availability request information for a next step or a particular one of the next steps without further communication with said protocol unit.

30 (currently amended). The apparatus according to claim 26, wherein said interface unit is configured to transmit next availability request information, ascertained after receipt of

the authorization information, to said central switching unit immediately with a next data packet or a next cell.

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31 (currently amended). The apparatus according to claim 27, wherein said interface unit is configured to transmit next availability request information, ascertained after receipt of the authorization information, to said central switching unit immediately with a next data packet or a next cell.
